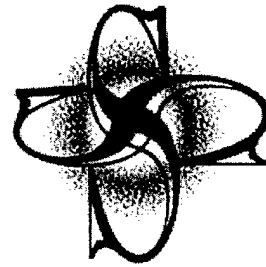


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Computational Models of Human Organization Dynamics

Quarterly Report #11

Sponsored by
Defense Advanced Research Projects Agency
Information Systems Office
Computational Models of Human Organization Dynamics
ARPA Order No. E495
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Period Covered: 9/1/99 – 11/30/99

Reporting Period

This is the eleventh quarterly report for the project: Computational Models of Human Organization Dynamics. This report covers the period from 9/1/99 through 11/30/99.

Progress During Reporting Period

During this quarter we have developed and reported our psycho-social ontology. It encompasses physical, cognitive, and social categories. Foundational categories of objects, time, and space are built into "actors", which are anything that embodies a process or capacity to behave (e.g., copy machine, human, organization). "Agents" are actors whose practices attend to criteria (i.e., agents with purpose). "Intelligent agents" additionally have the ability to manipulate their practices. Social structure is then built from relations over agent practices, and divides into resource relations, communication or dialogue relations, and role relations.

We have also embarked on a very detailed study of a particular asymmetric threat of global interest. We have consulted the open source literature and found exceptionally high-quality reference material is available on the individuals, organizations, cultures, and nations of importance to the study. We consulted with experts at SOCOM and at the FBI, and can report that they found our model of the subject to be very enlightening and useful to their analysis and decision-making about how to deal with the subject.

This study of an asymmetric threat, and our results when we tested it with experts, has taught us an important lesson about how best to test our work. In the past, we have sought access to data. Similarly, the government has sought (and continues to seek) data on our behalf. We now see that our method delivers the most value if we work with an organization charged with using such data to gain understanding and make decisions. In other words, we can build very high-quality models from data. But a model needs to be focused by some use – modeling is in service to action, and our view of risk management formalizes this common-sense conclusion. Hence we now hope that a partner organization can be identified, so that we can work with clients that have a vested interest in modeling a subject agent. In this way we deliver not only a model but more importantly a collection of methods and a model that serve action.

Plans for Next Quarter

This contract concludes at the end of the next quarter. We will continue to work on our technology, as well as the ontology and the many formal methods we have developed, and will report the state of these.

Equipment Purchases

There were no equipment purchases this quarter.

Personnel Matters

There have been no changes in the key personnel proposed for this project.

Meetings, Important Exchanges, and Decisions

We briefed Larry Willis on our progress and discussed the possibility of gaining access to a client organization charged in some way with responding to the issues of asymmetric threat. We believe SOCOM

would be an excellent candidate, both because of their responsibility and because we have interacted with some of their senior analysts for many years.

Problems

We have no problems to report at this time. We foresee no risk to our ability to complete this project successfully, on time, and on budget.

Fiscal Status

The table below summarizes the fiscal status for this contract and our projected spending over the next/final quarter.

Amount Currently Provided	\$1,574,647.
Expenditures and Commitments to Date	\$1374K
Manhours Planned, Actual	Planned = 1430 Actual = 1376
Estimated Funds/Qtr to Complete Work	\$200K
Estimated Date of Completion	2/29/00

Distribution of this Report

The following individuals/organizations comprise the distribution list for quarterly reports on this contract.

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